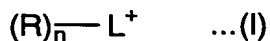


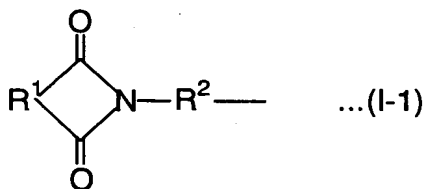
## CLAIMS

1. A film which comprises a thermoplastic composition comprising:

- 5 (A) 100 parts by weight of at least one thermoplastic resin selected from the group consisting of a thermoplastic polyester and an aromatic polycarbonate, and  
 (B) 0.1 to 10 parts by weight, in terms of ash content, of layered silicate having, as at least a portion of cations,  
 10 an organic cation represented by the following formula (I):



wherein R is a group represented by the following formula (I-1):



- 15 wherein R<sup>1</sup> is a divalent hydrocarbon group having 5 to 20 carbon atoms, and R<sup>2</sup> is a divalent hydrocarbon group having 1 to 20 carbon atoms,  
 an alkyl group, an aryl group or an aralkyl group, L<sup>+</sup> is an ammonium ion, a phosphonium ion or a hetero aromatic ion, and  
 20 n is an integer of 1 to 5, with the proviso that when L<sup>+</sup> is an ammonium ion or a phosphonium ion, n is 4 and four Rs may be the same or different.

2. The film of claim 1, which is a monoaxially or biaxially  
 25 oriented film.

3. The film of claim 2, wherein in X-ray diffraction when X-ray is irradiated in a perpendicular direction of a cross section of the film, an orientation factor f which corresponds  
 30 to a diffraction peak with the highest intensity among diffractions from the layered silicate satisfies the

following formula (II):

$$0.6 \leq f \leq 1 \quad \dots \quad (II)$$

wherein

$$f = \frac{3\langle \cos^2 \phi \rangle - 1}{2}$$

$$\langle \cos^2 \phi \rangle = \frac{\int_0^{\pi/2} I(\phi) \cos^2 \phi \sin \phi d\phi}{\int_0^{\pi/2} I(\phi) \sin \phi d\phi}$$

$\phi$  represents a direction angle (degree), and  $I(\phi)$  represents diffraction intensity at the direction angle  $\phi$ .

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4. The film of claim 2 or 3, wherein the shape of the cation-exchanged layered silicate observed from a cross section of the film satisfies the following formula (III):

$$120^\circ \leq (\angle ACB)_{ave} \leq 180^\circ \quad \dots \quad (III)$$

20 wherein A, B and C are points in one layered silicate, A and B are both end points in a longitudinal direction of the layered silicate, C is the farthest point from a straight line connecting A to B,  $\angle ACB$  is an angle ( $^\circ$ ) formed by the line AC and the line BC, and  $(\angle ACB)_{ave}$  is the average of  $\angle ACB$  which  
25 is determined from 10 layered silicates with the first to tenth largest distances between the points A and B that are contained in a cross sectional area of  $10 \mu m^2$ .

5. The film of claim 2 or 3, wherein the shape of the  
30 cation-exchanged layered silicate observed from a cross section of the film satisfies the following formula (IV):

$$0 \leq \sigma(\angle A*B D*E) \leq 16 \quad \dots \quad (IV)$$

wherein A and B are points in one layered silicate and end points in a longitudinal direction of the layered silicate,

A\*B is a straight line connecting the point A to the point B, D\*E is a reference straight light prepared on the cross section of the film,  $\angle A*B D*E$  is an acute angle ( $^{\circ}$ ) formed by A\*B and D\*E, and  $\sigma(\angle A*B D*E)$  is the standard deviation of  $\angle A*B D*E$  which is determined for 10 layered silicates with the first to tenth largest distances between the points A and B that are contained in an arbitrary cross sectional area of  $10 \mu\text{m}^2$ .

10 6. The film of claim 1, wherein the thermoplastic polyester is an aromatic polyester.

7. The film of claim 6, wherein the aromatic polyester is a poly(ethylene terephthalate), a  
15 poly(trimethylene)terephthalate, a poly(butylene terephthalate) and a poly(ethylene-2,6-naphthalene dicarboxylate).

8. The film of claim 1, wherein the aromatic polycarbonate  
20 is a polycarbonate based on bisphenol A.

9. The film of claim 1, wherein the layered silicate has, as at least a portion of cations, the organic cation represented by the formula (I) wherein at least one of Rs is  
25 the group represented by the formula (I-1).

10. The film of claim 1, wherein the thickness of the layered silicate in a cross section of the film is 3 to 100 nm.

30 11. A thermoplastic resin composition comprising:  
(A') 100 parts by weight of thermoplastic resin, and  
(B) 0.1 to 10 parts by weight in terms of ash content of layered silicate having, as at least a portion of cations, the organic cation represented by the formula (I) wherein at least one

of Rs is the group represented by the formula (I-1).

12. The composition of claim 11, wherein the layered silicate has the organic cation such that a cation exchange percentage (%) represented by the following formula (VI) is 50 to 200.

$$\text{Cation Exchange Percentage (\%)} = \{W_f / (1 - W_f)\} / (M_{\text{org}} / M_{\text{Si}}) \times 100 \quad \dots \text{(VI)}$$

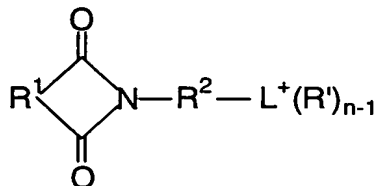
(Wf represents a weight reduction ratio of the layered silicate measured by a thermogravimetric analysis from 120°C to 800°C at a temperature increasing rate of 20°C/min,  $M_{\text{org}}$  represents the molecular weight of the imidazolium ion, and  $M_{\text{Si}}$  represents a molecular weight of the layered silicate per charge. The molecular weight per charge in the layered silicate is a value calculated by a reciprocal of the cation exchange capacity (unit: gram equivalent or eq/100 g) of the layered silicate.)

13. The composition of claim 11, wherein the layered silicate has a thermal decomposition temperature of not lower than 310°C.

14. The composition of claim 11, wherein the layered silicate is smectite, vermiculite or mica in which at least a portion of cations has been replaced by the organic cation.

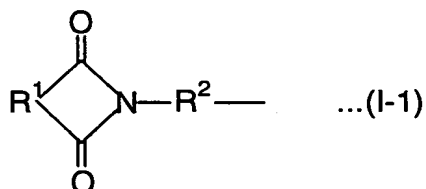
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15. A layered silicate having, as at least a portion of cations, an organic cation represented by the following formula:



- 30 wherein  $\text{R}^1$  is a divalent hydrocarbon group having 5 to 20 carbon atoms,  $\text{R}^2$  is a divalent hydrocarbon group having 1 to 20 carbon

atoms, R' is a group represented by the following formula (I-1):



wherein R<sup>1</sup> and R<sup>2</sup> are the same as defined above,

- 5 an alkyl group, an aryl group or an aralkyl group, L<sup>+</sup> is an ammonium ion, a phosphonium ion or a hetero aromatic ion, and n is 1 to 5.

16. The silicate of claim 15, which has the organic cation  
10 such that a cation exchange percentage (%) represented by the following formula is 50 to 200.

$$\text{Cation Exchange Percentage (\%)} = \{W_f / (1 - W_f)\} / (M_{\text{org}} / M_{\text{si}}) \times 100 \quad \dots (\text{VI})$$

- (W<sub>f</sub> represents a weight reduction ratio of the layered silicate  
15 measured by a thermogravimetric analysis from 120°C to 800°C at a temperature increasing rate of 20°C/min, M<sub>org</sub> represents the molecular weight of the imidazolium ion, and M<sub>si</sub> represents a molecular weight of the layered silicate per charge. The molecular weight per charge in the layered silicate is a value  
20 calculated by a reciprocal of the cation exchange capacity (unit: gram equivalent or eq/100 g) of the layered silicate.)

17. The silicate of claim 15, which has a thermal decomposition temperature of not lower than 310°C.

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18. The silicate of claim 15, which is smectite, vermiculite or mica in which at least a portion of cations has been replaced by the organic cation.

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